WHAT IS CLAIMED IS:

A method of detecting a protrusion on a recording medium,
comprising:

obtaining an angular position signal specifying an angle of rotation of the recording medium from a standard attitude of the recording medium;

obtaining a detection signal output from a collision detector designed to detect a collision between a surface of the recording medium and a flying slider; and

determining a collision between the surface of the recording medium and the flying slider based on the angular position signal and the detection signal.

- 2. The method of detecting according to claim 1, wherein a constant relative speed is set between the surface of the recording medium and the flying slider during the rotation of the recording medium.
- 3. The method of detecting according to claim 2, wherein said collision detector is designed to detect a sound induced based on a collision between the surface of the recording medium and the flying slider.
- 4. The method of detecting according to claim 3, wherein said collision detector is an acoustic emission sensor mounted on the flying slider.
- 5. The method of detecting according to claim 4, wherein said acoustic emission sensor is a piezoelectric element.
 - 6. The method of detecting according to claim 1,

comprising:

obtaining an index signal specifying the standard attitude of the recording medium when the angular position signal is generated; and

generating a sine wave signal based on a period of the index signal.

7. The method of detecting according to claim 6, comprising:

obtaining an index signal specifying the standard attitude of the recording medium when the angular position signal is generated; and

generating a cosine wave signal based on a period of the index signal.

8. The method of detecting according to claim 7, comprising:

generating a first reference signal specifying a product of the sine wave signal and the detection signal;

generating a first integral signal specifying an integral value of the first reference signal over a predetermined number of revolution of the recording medium;

generating a second reference signal specifying a product of the cosine wave signal and the detection signal;

generating a second integral signal specifying an integral value of the second reference signal over a predetermined number of revolution of the recording medium;

generating a comparative reference signal specifying a sum of the integral values of the first and second integral signals.

- 9. The method of detecting according to claim 8, wherein a constant relative speed is set between the surface of the recording medium and the flying slider during the rotation of the recording medium.
- 10. The method of detecting according to claim 9, wherein said collision detector is designed to detect a sound induced based on a collision between the surface of the recording medium and the flying slider.
- 11. The method of detecting according to claim 10, wherein said collision detector is an acoustic emission sensor mounted on the flying slider.
- 12. The method of detecting according to claim 11, wherein said acoustic emission sensor is a piezoelectric element.
- 13. A detecting apparatus for a protrusion on a recording medium, comprising:
- a function generating circuit designed to generate a wave signal of a trigonometric function synchronized with rotation of the recording medium;
- a first multiplying circuit designed to multiply a detection signal from an acoustic emission sensor by a sine wave signal so as to generate a first reference signal;
- a first integration circuit designed to calculate an integral value of the first reference signal over a predetermined number of revolution of the recording medium;
- a second multiplying circuit designed to multiply a detection signal from the acoustic emission sensor by a cosine wave signal so as to generate a second reference signal;

a second integration circuit designed to calculate an integral value of the second reference signal over a predetermined number of revolution of the recording medium; and an addition circuit designed to add outputs from the first and second integration circuits to each other.

- 14. The detecting apparatus according to claim 13, wherein said acoustic emission sensor is a piezoelectric element.
- 15. The detecting apparatus according to claim 14, wherein said piezoelectric element is a PZT element.
- 16. The detecting apparatus according to claim 13, comprising:

a spindle motor generating a driving force for the rotation of the recording medium;

aflying slider opposed to a surface of the recording medium mounted on a rotation shaft of the spindle motor, said flying slider supporting the acoustic emission sensor; and

a controlling circuit designed to control rotation speed of the rotation shaft based on position of the flying slider relative to the rotation shaft of the spindle motor.

- 17. The detecting apparatus according to claim 16, wherein said acoustic emission sensor is a piezoelectric element.
- 18. The detecting apparatus according to claim 17, wherein said piezoelectric element is a PZT element.